Multi-Item-Multi-Plant Inventory Control Of Production Systems With Shortages Backorders

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Summary

A multi-item model of a production-inventory system incorporating deterioration, shortages and capacity/budge constraints is considered. An optimal control policy for the model is developed using linear quadratic (LQ) theory for the case of deterministic demands. The problem of controlling large-scale production-inventory facilities is also considered, and the interaction prediction method is used to develop optimal policies. Results of simulations show that using the developed policy, any desired inventory levels can be maintained while minimizing costs and satisfying demand without violating capacity constraints.

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